

CLAIMS

What is claimed is:

1. A method to operate a mobile station with a network, comprising:

in at least one network control mode of operation, determining in the mobile station if a cell to which the mobile station is currently assigned has a first type of broadcast control channel; and

if the cell does have the first type of broadcast control channel, sending a PACKET MEASUREMENT REPORT message to the network for reporting on neighbour cells identified in a list received from the first type of broadcast control channel;

if the cell does not have the first type of broadcast control channel, sending a PACKET MEASUREMENT REPORT message to the network for reporting on neighbour cells identified in a list received from a second type of broadcast control channel, where the type of list is one of implicitly specified by the PACKET MEASUREMENT REPORT message or is explicitly specified by the PACKET MEASUREMENT REPORT message.

2. A method as in claim 1, where the list is implicitly specified by the PACKET MEASUREMENT REPORT message by casting the message in a format of an earlier version of the PACKET MEASUREMENT REPORT message that by default implies the type of list.

3. A method as in claim 2, where the PACKET MEASUREMENT REPORT message is sent in a GPRS Release 1997 format that implies a BA(GPRS) from a Broadcast Control Channel (BCCH).

4. A method as in claim 1, where the list is explicitly specified by the PACKET MEASUREMENT REPORT message by a field of the PACKET MEASUREMENT REPORT message.

5. A method as in claim 4, where the field is a one bit field for specifying that the PACKET MEASUREMENT REPORT is based on a BA(GPRS) or on a GSM Neighbour Cell list from a Broadcast Control Channel (BCCH).

6. A method as in claim 5, where the one bit field is added to the PACKET MEASUREMENT REPORT message only if the first type of broadcast control channel is not present in the cell.

7. A method as in claim 1, where the first type of broadcast control channel is a packet broadcast control channel (PBCCH), and where the one bit field is added to the PACKET MEASUREMENT REPORT message only if the PBCCH is not present in the cell.

8. A method as in claim 1, comprising a computer program product embodied on a tangible computer-readable medium and having program instructions for causing a computer to execute the method.

9. A computer program product embodied on a tangible computer-readable medium and comprising program instructions for causing a computer of a mobile station (MS) to execute a method of operating with a network, comprising:

computer instructions, responsive to the MS being in a network control mode of operation where it reports cell measurement results to the network, for determining if a cell to which the mobile station is currently assigned has a PBCCH; and

computer instructions, responsive to a determination that the cell does have the PBCCH, for sending a PACKET MEASUREMENT REPORT message to the network for reporting on neighbour cells identified in a GSM Neighbour Cell list received from the PBCCH, and to a determination that the cell does not have the PBCCH, for sending a PACKET MEASUREMENT REPORT message to the network for reporting on neighbour cells first identified in a BA(GPRS), before the MS has acquired the GSM Neighbour Cell list from a BCCH, and after the MS has acquired the GSM Neighbour Cell list from the BCCH, the neighbor cells identified in the GSM Neighbour Cell list, where the type of list in use by the MS is implicitly specified by the PACKET

MEASUREMENT REPORT message.

10. A computer program product as in claim 9, where the list is implicitly specified by the PACKET MEASUREMENT REPORT message by sending the message in a format compatible with an earlier version of the PACKET MEASUREMENT REPORT message that by default implies the use of the BA(GPRS).

11. A computer program product as in claim 9, where the list is implicitly specified by the PACKET MEASUREMENT REPORT message by sending the message to not include a Release 99 extension ('additions in Release 99').

12. A computer program product as in claim 11, where the PACKET MEASUREMENT REPORT message is sent in a GPRS Release 1997 format.

13. A computer program product embodied on a tangible computer-readable medium and comprising program instructions for causing a computer of a mobile station (MS) to execute a method of operating with a network, comprising:

computer instructions, responsive to the MS being in a network control mode of operation where it reports cell measurement results to the network, for determining if a cell to which the mobile station is currently assigned has a PBCCH; and

computer instructions, responsive to a determination that the cell does have the PBCCH, for sending a PACKET MEASUREMENT REPORT message to the network for reporting on neighbour cells identified in a GSM Neighbour Cell list received from the PBCCH, and to a determination that the cell does not have the PBCCH, for sending a PACKET MEASUREMENT REPORT message to the network for reporting on neighbour cells identified in list that is specified explicitly in the PACKET MEASUREMENT REPORT message.

14. A computer program product as in claim 13, where the list is explicitly specified by the PACKET MEASUREMENT REPORT message by a field of the PACKET MEASUREMENT REPORT message.

15. A computer program product as in claim 14, where the field is a one bit field for specifying that the PACKET MEASUREMENT REPORT is based on a BA(GPRS) or on a GSM Neighbour Cell list received from a Broadcast Control Channel (BCCH).

16. A computer program product as in claim 15, where the one bit field is added to the PACKET MEASUREMENT REPORT message only if the PBCCH is not present in the cell.

17. A mobile station (MS) operable with a network in a general packet radio system (GPRS) mode of operation, comprising:

a radio frequency transceiver; and

coupled to said radio frequency transceiver, a controller that operates in at least one network control mode of operation to determine if a cell to which the MS is currently assigned has a PBCCH and, if the cell does have the PBCCH, operates further to send a PACKET MEASUREMENT REPORT message to the network for reporting on neighbour cells identified in a GSM Neighbour Cell list received from the PBCCH; said controller being responsive to a condition where the cell does not have the PBCCH to determine if the GSM Neighbour Cell list has been received through the transceiver from a BCCH and, if it has, to send a PACKET MEASUREMENT REPORT message to the network for reporting on neighbour cells identified in the GSM Neighbour Cell list received from the BCCH, while indicating the list that was used either implicitly or explicitly; or if the GSM Neighbour Cell list has not been received, said controller sends a PACKET MEASUREMENT REPORT message to the network for reporting on neighbour cells identified in a BA(GPRS) received from the BCCH, while indicating the list that was used either implicitly or explicitly.

18. A MS as in claim 17, where the network control mode is NC2.

19. A MS as in claim 17, where the network control mode is NC1.

20. A MS as in claim 17, where the list is explicitly signaled by the state of a

NC_MEAS_LIST_TYPE bit in the PACKET MEASUREMENT REPORT message.